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Sami Uskela

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ALSTON & BIRD LLP

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EXAMINER

GOLD, AVI M

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/049,590	Applicant(s) USKELA ET AL.	
	Examiner AVI GOLD	Art Unit 2457	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-13,15-18,20-28,30,31,35 and 39-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-13,15-18,20-28,30,31,35 and 39-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is responsive to the amendment filed on May 26, 2009. Claims 1, 6, 15, 21, and 39-42 were amended. Claims 1-4, 6-13, 15-18, 20-28, 30, 31, 35, and 39-42 are pending.

Response to Amendment

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 6, 7, 10-13, 15-18, 20-22, 25-28, 30, 31, 35, and 39-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satran et al., U.S. Patent No. 6,430,183, in view of Stapleton et al., U.S. Patent No. 6,175,875, in view of Lee et al., U.S. Patent No. 6,490,285,, further in view of Steger et al., U.S. Patent No. 6,505,247.

Satran teaches the invention as claimed including transmission networks of the type wherein a plurality of transmitters are transmitting streams of data frames over a broadband channel to a plurality of receivers (see abstract).

Regarding claim 1, Satran teaches a method comprising the steps of:

receivers belonging to a multicast group in a packet-switched network and specific parameters of the receivers, wherein the specific parameters comprise parameters which are dependent on receiver conditions (col. 4, lines 48-60, col. 5, lines 15-43, Satran discloses address templates for filtering and receiver specific parameters);

receiving, in a routing unit, data packets from a sender (col. 3, lines 31-39, Satran discloses data transmitted from a host computer);

buffering, in a routing unit, out of the data packets received from the sender multicast data packets having a destination address which is a multicast address of the multicast group (col. 4, lines 48-60, Satran discloses the data transmitted being part of a multicast);

communicating the multicast address from the routing unit to the control unit (col. 3, lines 31-39, col. 4, lines 48-60);

in the control unit, determining addresses of receivers of the multicast group indicated by the multicast address, preparing a receiver list from the addresses of the receivers, and determining the specific parameters of the receivers by searching where the specific parameters for respective receivers of the receiver list are stored, and supplying the receiver list and the specific parameters per address of the receiver list to the routing unit (col. 4, lines 48-60, Satran discloses address templates for filtering, col. 5, lines 26-35, Satran discloses the multicast group address filtering creating a receiver list, col. 5, lines 33-43, Satran discloses a receiver searching for a particular multicast address and a filtered data block received at an address);

filtering the multicast data packets accordance with the specific parameters for respective receiver of the multicast group (col. 5, lines 16-35, Satran discloses filtering done with a receiver specific parameter); and

Satran fails to teach the limitation further including storing, in a control unit, tables of addresses of receivers.

However, Stapleton teaches the transmission of multicast communications or other high volume traffic through a network (see abstract). Stapleton teaches the use of a table that stores multicast communication addresses (col. 7, lines 4-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Satran in view of Stapleton to store, in a control unit, tables of addresses of receivers. One would be motivated to do so because a table is an efficient and convenient way to store information.

Satran and Stapleton fail to teach the limitation further including storing parameters of the receivers in a table, searching the tables based on the multicast address, determining parameters of the receivers by searching the table in which the parameters for each receiver are stored, and filtering of packets in the routing unit and transmission of packets by the routing unit.

However, Lee teaches an IP multicast interface used in network connections with gateway devices (see abstract). Lee teaches searching tables based on a multicast address to determine parameters of receivers/clients and filtering of packets in the routing unit and transmission of packets by the routing unit (col. 6, lines 40-61).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Satran and Stapleton in view of Lee to store parameters of the receivers in a table, search the tables based on the multicast address and determine parameters of the receivers by searching the table in which the parameters for each receiver are stored. One would be motivated to do so because a table is an efficient and convenient way to store information and the use of an address is an efficient way to search a table, and filtering data at a routing unit before transmission allows for only necessary packets to be sent.

Satran, Stapleton, and Lee fail to teach obtaining filtered multicast data packets individualized for the respective receivers and transmitting, by the routing unit, the individualized filtered multicast data packets to the addresses of the respective receivers.

However, Steger teaches an industrial automation system (see abstract). Steger teaches routers routing the multicasts packets to each of their plurality of destinations (col. 8, lines 40-47).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Satran, Stapleton, and Lee in view of Steger to obtain filtered multicast data packets individualized for the respective receivers and transmitting, by the routing unit, the individualized filtered multicast data packets to the addresses of the respective receivers. One would be motivated to do so because it reduces network traffic (col. 8, lines 44-47).

Regarding claim 2, Satran teaches the method of claim 1, wherein the specific parameters indicate a certain content of data packets that is not to be received by a specific receiver (col. 4, lines 48-60).

Regarding claim 3, Satran teaches the method of claim 1, wherein the specific parameters indicate a data amount of a certain content in data packets which is not to be received by a specific receiver (col. 7, lines 58-66, Satran discloses a block size that needs to be reached).

Regarding claim 4, Satran teaches the method of claim 2, wherein the certain content is filtered out during the filtering (col. 5, lines 15-43).

Regarding claim 6, Satran teaches a method, comprising:
receivers belonging to a multicast group in a packet-switched network and specific parameters of the receivers, wherein the specific parameters comprise parameters which are dependent on receiver conditions (col. 4, lines 48-60, col. 5, lines 15-43);

receiving, in a routing unit, data packets from a sender (col. 3, lines 31-39);
buffering, in a routing unit, out of the data packets received from the sender multicast data packets having a destination address which is a multicast address of a multicast group (col. 4, lines 48-60);

communicating the multicast address from the routing unit to the control unit (col. 3, lines 31-39, col. 4, lines 48-60);

in the control unit, determining addresses of receivers of the multicast group indicated by the multicast address, preparing a receiver list from the addresses of the receivers, and determining the specific parameters of the receivers by searching where the specific parameters for respective receivers of the receiver list are stored, and supplying the receiver list and the specific parameters per address of the receiver list to the routing unit (col. 4, lines 48-60, col. 5, lines 26-43);

filtering the addresses in accordance with the specific parameters, (col. 5, lines 16-35); and

Satran fails to teach the limitation further including storing, in a control unit, tables of addresses of receivers.

However, Stapleton teaches the use of a table that stores multicast communication addresses (col. 7, lines 4-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Satran in view of Stapleton to store, in a control unit, tables of addresses of receivers. One would be motivated to do so because a table is an efficient and convenient way to store information.

Satran and Stapleton fail to teach the limitation further including storing parameters of the receivers in a table, searching the tables based on the multicast address, and determining parameters of the receivers by searching the table in which

the parameters for each receiver are stored, and filtering of packets in the routing unit and transmission of packets by the routing unit.

However, Lee teaches searching tables based on a multicast address to determine parameters of receivers/clients and filtering of packets in the routing unit and transmission of packets by the routing unit (col. 6, lines 40-61).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Satran and Stapleton in view of Lee to store parameters of the receivers in a table, search the tables based on the multicast address and determine parameters of the receivers by searching the table in which the parameters for each receiver are stored. One would be motivated to do so because a table is an efficient and convenient way to store information, the use of an address is an efficient way to search a table, and filtering data at a routing unit before transmission allows for only necessary packets to be sent.

Satran, Stapleton, and Lee fail to teach obtaining filtered multicast data packets for the respective receivers, the filtered receiver addresses being a subset of the receiver addresses included in the multicast group and transmitting, by the routing unit, the multicast data packets to respective addresses included in the filtered receiver addresses.

However, Steger teaches routers routing the multicasts packets to each of their plurality of destinations (col. 8, lines 40-47).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Satran, Stapleton, and Lee in view of Steger to obtain filtered

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multicast data packets for the respective receivers, the filtered receiver addresses being a subset of the receiver addresses included in the multicast group and transmitting, by the routing unit, the multicast data packets to respective addresses included in the filtered receiver addresses. One would be motivated to do so because it reduces network traffic (col. 8, lines 44-47).

Regarding claim 7, Satran teaches the method of claim 6, wherein the buffering step further includes:

detecting contents and a data amount of data packets, and wherein the filtering further includes (col. 4, lines 48-60):

filtering the determined addresses in accordance with detected results (col. 5, lines 16-35).

Regarding claim 10, Satran teaches the method of claim 7, wherein the specific parameters indicate a certain content of data packets that is not to be received by a specific receiver (col. 7, lines 58-66).

Regarding claim 11, Satran teaches the method of claim 7, wherein the specific parameters indicate a certain data amount of data packets which is not to be received by a specific receiver (col. 7, lines 58-66).

Regarding claim 12, Satran teaches the method of claim 10, wherein when the certain content is detected in the detecting step the address of the specific receiver is filtered out during the filtering step (col. 5, lines 15-43).

Regarding claim 13, Satran teaches the method of claim 11, wherein when the certain data amount is detected in the detecting step the address of the specific receiver is filtered out during the filtering step col. 5, lines 15-43).

Regarding claim 15, Satran teaches an apparatus, comprising:

a control unit configured to store addresses of receivers belonging to a multicast group in a packet-switched network and specific parameters of the receivers, wherein the specific parameters comprise parameters which are dependent on receiver conditions; and

a routing unit configured to receive data packets from a sender and buffer multicast data packets out of the data packets received from the sender, the multicast data packets having a destination address which is a multicast address of a multicast group, and communicate the multicast address to the control unit;

wherein the control unit is configured to determine the addresses of the receivers of the multicast group indicated by the multicast address, prepare a receiver list from the addresses of the receivers, and determine the specific parameters of the receivers by searching where the specific parameters for respective receivers of the receiver list

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are stored, and to supply the receiver list and the specific parameters per address of the receiver list to the routing unit (col. 4, lines 48-60, col. 5, lines 26-43);

filtering the multicast data packets in accordance with the specific parameters for respective receivers of the multicast group (col. 3, lines 31-39; col. 4, lines 48-60; col. 5, lines 15-43).

Satran fails to teach the limitation further including storing, in a control unit, tables of addresses of receivers.

However, Stapleton teaches the use of a table that stores multicast communication addresses (col. 7, lines 4-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Satran in view of Stapleton to store, in a control unit, tables of addresses of receivers. One would be motivated to do so because a table is an efficient and convenient way to store information.

Satran and Stapleton fail to teach the limitation further including storing parameters of the receivers in a table, searching the tables based on the multicast address, and determining parameters of the receivers by searching the table in which the parameters for each receiver are stored, and filtering of packets in the routing unit and transmission of packets by the routing unit.

However, Lee teaches searching tables based on a multicast address to determine parameters of receivers/clients and filtering of packets in the routing unit and transmission of packets by the routing unit (col. 6, lines 40-61).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Satran and Stapleton in view of Lee to store parameters of the receivers in a table, search the tables based on the multicast address and determine parameters of the receivers by searching the table in which the parameters for each receiver are stored. One would be motivated to do so because a table is an efficient and convenient way to store information, the use of an address is an efficient way to search a table, and filtering data at a routing unit before transmission allows for only necessary packets to be sent.

Satran, Stapleton, and Lee fail to teach obtaining filtered multicast data packets individualized for the respective receivers and transmitting the individualized filtered multicast data packets to the addresses of the respective receivers.

However, Steger teaches routers routing the multicasts packets to each of their plurality of destinations (col. 8, lines 40-47).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Satran, Stapleton, and Lee in view of Steger to obtain filtered multicast data packets individualized for the respective receivers and transmitting the individualized filtered multicast data packets to the addresses of the respective receivers. One would be motivated to do so because it reduces network traffic (col. 8, lines 44-47).

Regarding claim 16, Satran teaches the apparatus of claim 15, where the specific parameters indicate a certain content of data packets that is not to be received by the specific receiver (col. 7, lines 58-66).

Regarding claim 17, Satran teaches the apparatus of claim 15, wherein the specific parameters indicate a data amount certain content in data packets which data amount is not to be received by a specific receiver (col. 7, lines 58-66).

Regarding claim 18, Satran teaches the apparatus of claim 16, wherein the certain content is filtered out by the routing unit (col. 5, lines 15-43).

Regarding claim 20, Satran teaches the apparatus of claim 15, wherein the control means determines the receiver addresses and specific parameters via tables stored in the control unit (col. 5, lines 26-35, Satran discloses an address field stored in a bitmap).

Regarding claim 21, Satran teaches an apparatus, comprising:
a control unit configured to store addresses of receivers belonging to a multicast group in a packet-switched network and specific parameters of the receivers, wherein the specific parameters comprise parameters which are dependent on receiver conditions; and

a routing unit configured to receive data packets from a sender and buffer multicast data packets out of the data packets received from the sender, the multicast data packets having a destination address which is a multicast address of a multicast group, and communicate the multicast address to the control unit; and

wherein the control unit is configured to determine the addresses of the receivers of the multicast group indicated by the multicast address, prepare a receiver list from the addresses of the receivers, and determine the specific parameters of the receivers by searching where the specific parameters for respective receivers of the receiver list are stored, and to supply the receiver list and the specific parameters per address of the receiver list to the routing unit; and

filtering the address of the receivers of the multicast group in accordance with the specific parameters for respective receivers of the multicast group (col. 3, lines 31-39; col. 4, lines 48-60; col. 5, lines 15-43).

Satran fails to teach the limitation further including storing, in a control unit, tables of addresses of receivers.

However, Stapleton teaches the use of a table that stores multicast communication addresses (col. 7, lines 4-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Satran in view of Stapleton to store, in a control unit, tables of addresses of receivers. One would be motivated to do so because a table is an efficient and convenient way to store information.

Satran and Stapleton fail to teach the limitation further including storing parameters of the receivers in a table, searching the tables based on the multicast address, and determining parameters of the receivers by searching the table in which the parameters for each receiver are stored, and filtering of packets in the routing unit and transmission of packets by the routing unit.

However, Lee teaches searching tables based on a multicast address to determine parameters of receivers/clients and filtering of packets in the routing unit and transmission of packets by the routing unit (col. 6, lines 40-61).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Satran and Stapleton in view of Lee to store parameters of the receivers in a table, search the tables based on the multicast address and determine parameters of the receivers by searching the table in which the parameters for each receiver are stored. One would be motivated to do so because a table is an efficient and convenient way to store information, the use of an address is an efficient way to search a table, and filtering data at a routing unit before transmission allows for only necessary packets to be sent.

Satran, Stapleton, and Lee fail to teach obtaining filtered multicast data packets individualized for the respective receivers, the filtered receiver addresses being a subset of the receiver addresses included in the multicast group and transmitting the individualized filtered multicast data packets to the addresses of the respective receivers.

However, Steger teaches routers routing the multicasts packets to each of their plurality of destinations (col. 8, lines 40-47).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Satran, Stapleton, and Lee in view of Steger to obtain filtered multicast data packets individualized for the respective receivers, the filtered receiver addresses being a subset of the receiver addresses included in the multicast group and transmitting the individualized filtered multicast data packets to the addresses of the respective receivers. One would be motivated to do so because it reduces network traffic (col. 8, lines 44-47).

Regarding claim 22, Satran teaches the apparatus of claim 21, wherein the routing unit detects contents and a data amount of data packets and communicates the results to the control unit which designates the filters in accordance with these results (col. 7, lines 58-66).

Regarding claim 25, Satran teaches the apparatus of claim 22, wherein the specific parameters indicate a certain content of data packets that is not to be received by a specific receiver (col. 7, lines 58-66).

Regarding claim 26, Satran teaches the apparatus of claim 22, wherein the specific parameters indicate a certain data amount of data packets which is not to be received by a specific receiver (col. 7, lines 58-66).

Regarding claim 27, Satran teaches the apparatus of claim 25, wherein when the certain content is detected by the routing unit the address of the specific receiver is filtered out by the routing unit (col. 7, lines 58-66).

Regarding claim 28, Satran teaches the apparatus of claim 26, wherein when the certain data amount is detected by the routing unit the address of the specific receiver is filtered out by the routing unit (col. 7, lines 58-66).

Regarding claim 30, Satran teaches the apparatus of claim 21, wherein the control unit determines the receiver addresses and specific parameters via tables stored in the control unit (col. 5, lines 26-35).

Regarding claim 31, Satran teaches the method of claim 3, wherein the certain content is filtered out during the filtering (col. 5, lines 15-43).

Regarding claim 35, Satran teaches the apparatus of claim 17, wherein the certain content is filtered out by the routing unit (col. 5, lines 15-43).

Claims 39-42 do not teach or define any new limitations above claims 1 and 15 and therefore are rejected for similar reasons.

3. Claims 8, 9, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satran, Stapleton, Lee, and Steger further in view of Haggerty et al., U.S. Patent No. 6,331,983.

Satran teaches the invention substantially as claimed including transmission networks of the type wherein a plurality of transmitters are transmitting streams of data frames over a broadband channel to a plurality of receivers (see abstract). Stapleton teaches the invention substantially as claimed including the transmission of multicast communications or other high volume traffic through a network (see abstract). Lee teaches the invention substantially as claimed including an IP multicast interface used in network connections with gateway devices (see abstract). Steger teaches the invention substantially as claimed including an industrial automation system (see abstract).

As to claims 8, 9, 23, and 24, Satran, Stapleton, Lee, and Steger teach the method and apparatus of claims 6 and 21.

Satran, Stapleton, Lee, and Steger fail to teach the limitation further including a time at which no data packets are to be received or filtered.

However, Haggerty teaches a method and apparatus for establishing a connection path for multicast traffic through a switched network, and across router/switch boundaries, which conserves network bandwidth (see abstract). Haggerty teaches the use of a time-to-live (TTL) (col. 2, lines 9-15; col. 4, lines 34-54).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Satran, Stapleton, Lee, and Steger in view of Haggerty to use a time at which no data packets are to be received or filtered. One would be motivated to do

so because it would allow for controlled distribution of multicast packets (col. 2, lines 3-5).

Claim Objections

Claim 3 objected to because of the following informalities: It appears the second line of the claim should be amended to state "indicate a data amount of a certain content..." as compared to claim 17. Appropriate correction is required.

Response to Arguments

4. Applicant's arguments with respect to claims 1-4, 6-13, 15-18, 20-28, 30, 31, 35, and 39-42 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat. No. 6,055,364 to Speakman et al., because it discloses content-based filtering of multicast information.

U.S. Pat. No. 5,933,605 to Kawano et al., because it discloses multicast messages filtered based on message content.

U.S. Pat. No. 6,175,875 to Stapleton et al., because it discloses multicast filtering.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AVI GOLD whose telephone number is (571)272-4002. The examiner can normally be reached on M-F 8:30 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on 571-272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/A. G./
Examiner, Art Unit 2457

/ARIO ETIENNE/
Supervisory Patent Examiner, Art Unit 2457